1997

ANNUAL COMPLIANCE REPORT

FOR

INDIANA PUBLIC WATER SUPPLY SYSTEMS

Prepared by:
Indiana Department of Environmental Management
Office of Water Management
Drinking Water Branch
June 1998

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INTRODUCTION

The United States Environmental Protection Agency (USEPA) established the Public Water Supply Supervision Program (PWSSP) under the authority of the 1974 Safe Drinking Water Act (SDWA) to ensure the quality of drinking water for human consumption. The SDWA allows states to seek EPA approval to administer their own PWSS programs, which is referred to as primacy. The State of Indiana received primacy for the Public Water Supply Supervision Program in 1992.

The 1996 Amendments to the Safe Drinking Water Act require each state with primacy to prepare an annual report of the violations to the national primary drinking water regulations by public water systems. Section 1414(c)(3)(A) of the SDWA requires states to submit an annual summary of violations of a maximum contaminant level (MCL), treatment techniques, variances and exemptions[1], and significant monitoring violations. This report is intended to satisfy this annual reporting requirement for the State of Indiana for the time period January 1, 1997 through December 31, 1997.

INDIANA PUBLIC WATER SUPPLY SUPERVISION PROGRAM

The Indiana Department of Environmental Management (IDEM), Office of Water Management, Drinking Water Branch is the primary administrator of the Indiana Public Water Supply Supervision Program. The Drinking Water Branch (DWB) maintains an inventory of all public water supplies (PWSs). Each PWS is required to collect drinking water samples for various contaminants. This water sample analysis data is compiled to ensure that public water systems do not exceed the maximum contaminant levels established by the State of Indiana and the Environmental Protection Agency. The Drinking Water Branch verifies that the PWSs monitor their water for the required contaminants at the appropriate intervals specified by EPA and IDEM. The data is stored in the Indiana Public Water Supply Compliance Database. Compliance assistance is offered to public water systems to ensure an understanding of monitoring requirements and encourage timely reporting. DWB staff members provide technical assistance to owners and operators and conduct sanitary surveys of PWSs to ensure compliance with the primary drinking water regulations. An operator certification program is in place to certify individuals that are responsible for the operation and maintenance of a public water system. The DWB also reviews plans and issues construction permits to ensure that new water system facilities will produce safe and adequate drinking water. The IDEM Office of Enforcement provides support to the PWSSP by issuing formal enforcement actions when necessary to address significant violations. The Indiana State Department of Health maintains a program to certify laboratories that conduct the analysis of drinking water contaminants.

The DWB submits quarterly reports to the EPA which provide PWS inventory statistics, site visit data, maximum contaminant level or treatment technique violations, monitoring and reporting violations, and the related enforcement actions pertaining to the violations. Data for these reports is extracted from the Indiana PWS Compliance Database and is submitted electronically to the federal version of the Safe Drinking Water Information System.

[1] IDEM did not issue any variances or exemptions in 1997. Therefore, variances or exemptions are not addressed in this summary report.

PUBLIC WATER SYSTEM DEFINITIONS

A public water system (PWS) is defined as a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of PWSs: community, nontransient noncommunity, and transient noncommunity public water systems.

Community Water System (CWS)

A PWS that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Examples of a CWS include towns, subdivisions, and mobile home parks.

Nontransient Noncommunity System (NTNC)

A PWS that is not a community water system that serves at least 25 of the same persons for over six months per year. Examples of a NTNC system include schools, factories, offices, and daycare centers.

Transient Noncommunity System (TNC)

A PWS that is not a community water system that serves at least 25 people daily, however it does not serve the same individuals for more than 6 months. Examples of a TNC system include campgrounds, churches, restaurants, and rest stops.

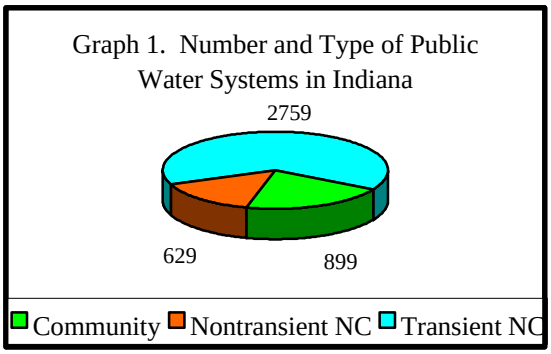
Public water systems can further be defined by the source of the water that is distributed. The source types used to describe a system are surface water, ground water, and purchased water.

Within each category a system may be classified according to size. The following table illustrates the classification of public water supplies by size.

PWS Size Categories	
Size	**Population**
Small	0-3,300
Medium	3,301-10,000
Large	>10,000

PUBLIC WATER SUPPLY INVENTORY

There are approximately 4,287 active public water supplies in Indiana. Graph 1 shows the distribution of public water systems by the system type.

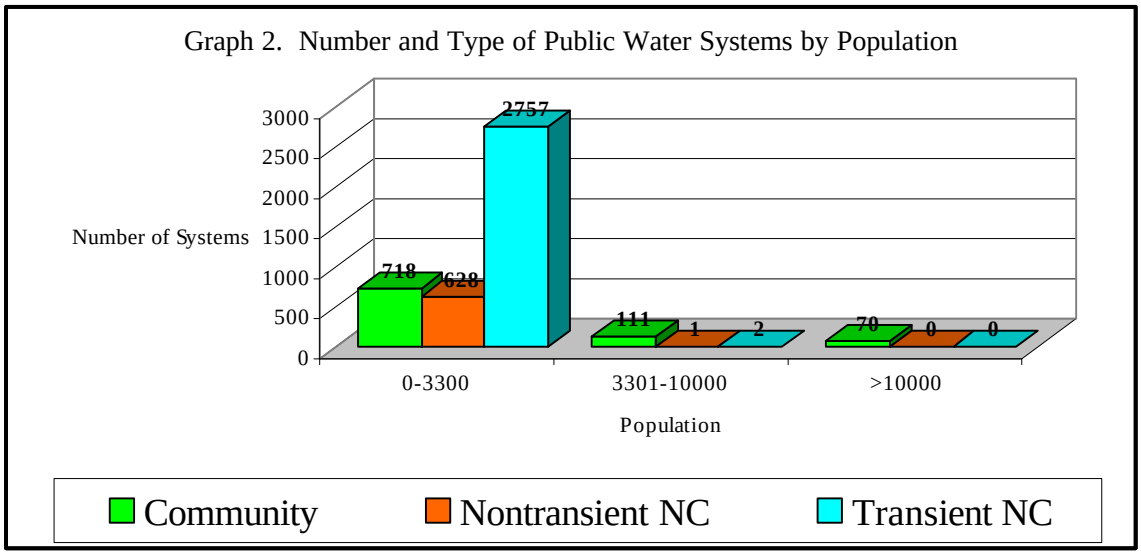


The size distribution of systems varies within each system type category as illustrated in Graph 2. Although most of the systems are classified as small transient systems, the majority of the total population is served by water from community water systems as illustrated in Graph 3.[2]

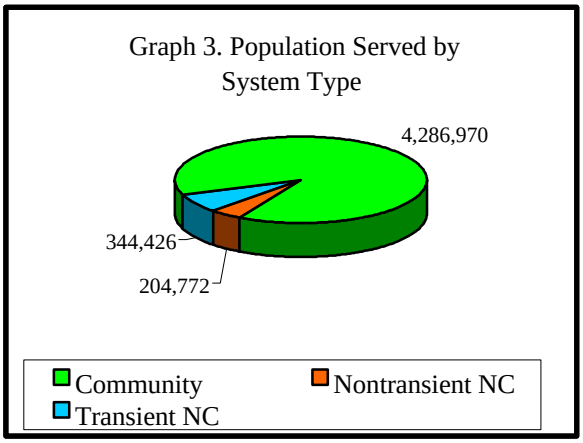
[2] In actuality, there may be an overlap in the population data since a consumer of a community public water system may also be a consumer of nontransient noncommunity system. For example, a child who lives in a subdivision, which is a community water system, may also be a consumer at school, which could be classified as a nontransient noncommunity water system.

Drinking water in Indiana comes from ground water sources via wells or surface water sources such as lakes or rivers. Some public water systems purchase water from other public water supplies and distribute the water to their customers. Ninety-six percent (96%) of all public water systems are classified as ground water systems. However, only fifty percent (50%) of the total population is served by ground water systems. See Graphs 4 & 5.

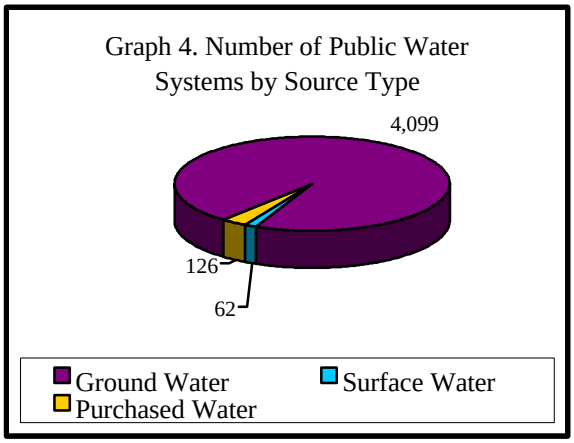
Graph 2. Number and Type of Public Water Systems by Population



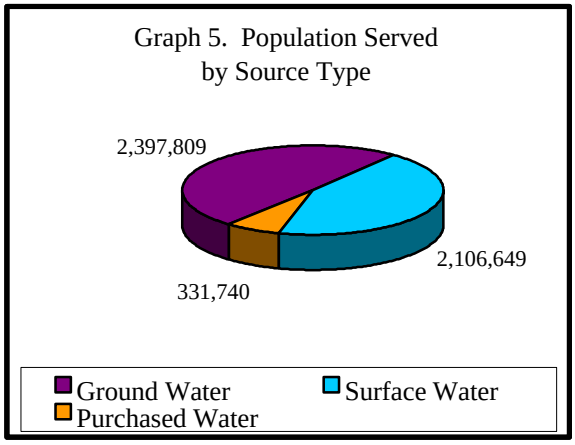
Graph 3. Population Served by System Type



Graph 4. Number of Public Water Systems by Source Type



Graph 5. Population Served by Source Type



DRINKING WATER MONITORING REQUIREMENTS

The Safe Drinking Water Act mandates the monitoring and reporting of various bacteriological and chemical contaminants that may be found in drinking water. The contaminants are categorized as total coliform, nitrate, inorganic chemicals (IOCs), volatile organic compounds (VOCs), synthetic organic compounds (SOCs), radionuclides, lead and copper, and total trihalomethanes. Levels of these contaminants in drinking water are compared to maximum contaminant levels (MCLs)[3] which are set by EPA and the State to ensure that the water is safe for human consumption. *See Appendix A for a list of MCLs and action levels for all of the regulated contaminants.* If the level of a contaminant in a public water supply is confirmed to have exceeded a maximum contaminant level, the system has violated the provisions of the Safe Drinking Water Act and is assigned a MCL violation.

The SDWA also requires systems to comply with the provisions of the Surface Water Treatment Rule (SWTR) and the Lead and Copper Rule. If a PWS fails to properly treat its water or cannot control the levels of such contaminants as bacteria, viruses, parasitic microorganisms, lead, or copper, the system has violated the provisions of the Safe Drinking Water Act and is assigned a treatment technique (TT) violation.

The contaminants and parameters that must be monitored depend on the system type, population served, and source type of the PWS. The frequency of the sampling varies depending on the characteristics of each contaminant and the apparent risk to human health. Acute contaminants, such as total coliform and nitrate, are contaminants that may pose an immediate risk to human health. Non-acute contaminants, which include all of the remaining regulated contaminants, are contaminants that may have long-term health effects if consumed at certain levels for extended periods of time. For example, a transient ground water system must monitor for bacteriological contaminants and nitrate only. However, a large community surface water system must monitor for all of the contaminants and fulfill the filtration and disinfection requirements of the SWTR. *See Appendix B, Table A for a summary of the contaminant groups that must be monitored by each type of water system. Tables B and C provide a summary of the monitoring frequencies by contaminant group*. If a PWS fails to monitor at the designated frequency or fails to submit the results to the DWB, the system has violated the provisions of the Safe Drinking Water Act and is assigned a monitoring and reporting (M/R) violation.

If a public water system exceeds a maximum contaminant level, fails to properly treat its water, or does not monitor according to a prescribed schedule, the PWS must notify its customers of the violation and work to correct the problem. Public notification is a requirement of the SDWA. It serves to inform the users of a public water supply of the nature of the violation, what steps are being taken to correct the problem, what the potential adverse health effects may be, etc. Examples of public notices may be radio or television announcements, newspaper notices, handbills delivered door-to-door, or inserts in water bills, to name a few.

[3] The Lead and Copper Rule utilizes action levels rather than MCLs to trigger treatment technique requirements.

VIOLATION SUMMARY

Table 1 provides a summary of the number of systems with violations for all of the regulated drinking water contaminants. The summary includes the MCL, treatment technique, and major monitoring and reporting violations for the 1997 calendar year (January 1, 1997-December 31, 1997). The number of systems that are credited with each type of violation are totaled on the right side of the table. The discrepancy between the total number of systems in violation and the sum of the number of systems in violation for each contaminant group is due to the fact that often one system may have multiple violations.[4]

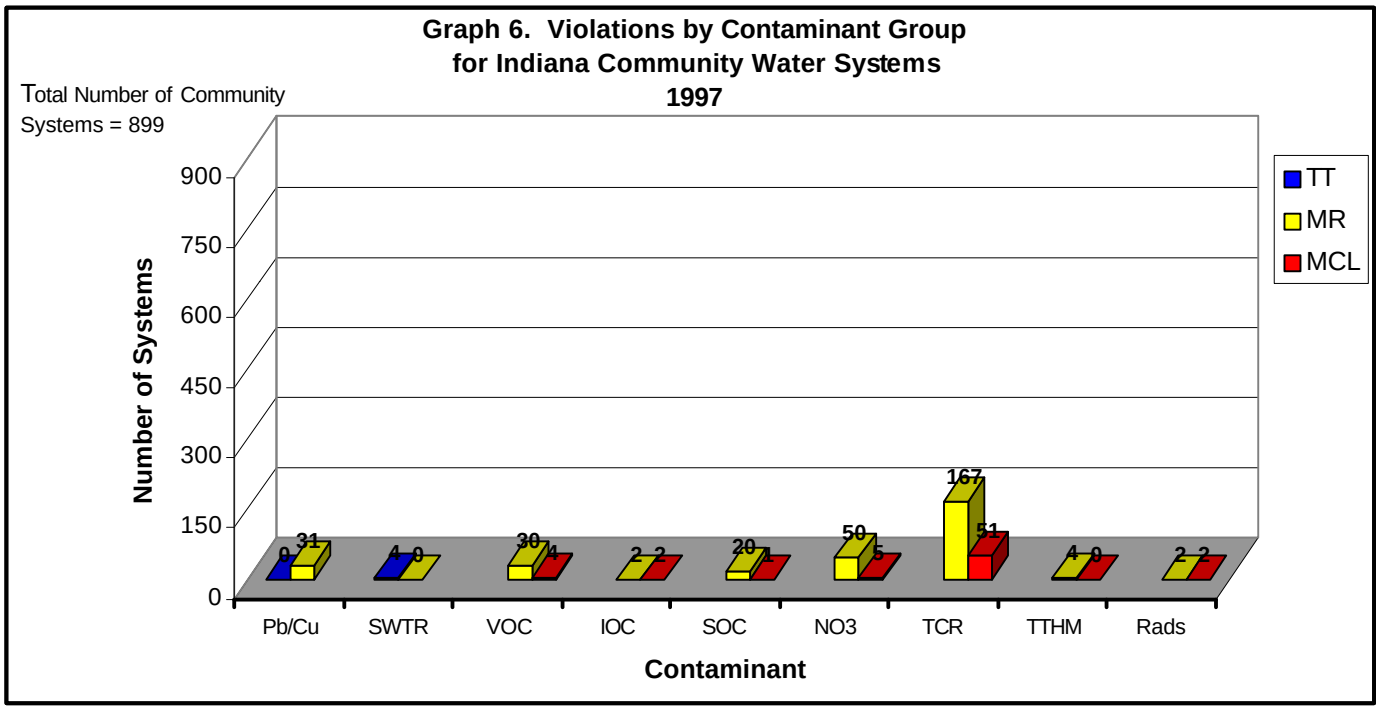
Appendices C & D contain lists of all of the systems that were assigned MCL, TT, and M/R violations in 1997. These lists were generated from the current Indiana Public Water Supply Compliance Database and reconciled with data from the SDWIS/FED database.

Graphs 6, 7, and 8 illustrate the number of MCL, M/R, and TT violations that occurred in 1997 for each contaminant group by water system type. The transient systems tend to have the highest noncompliance rate for monitoring and reporting violations. In 1997, approximately forty-six percent (46%) of the transient systems failed to monitor and report for one or more quarters of sampling for the bacteriological contaminants, compared to twenty percent (20%) of the community and nontransient noncommunity systems. Approximately twenty percent (20%) of transient systems did not sample for nitrate in 1997, whereas only 6% of the community and nontransient noncommunity systems failed to monitor for nitrate. The lower compliance rates for monitoring and reporting for transient systems may be attributed to the fact that these systems, such as restaurants, campgrounds, hotels, or churches are primarily engaged in a business other than water supply. At this time, only community water systems serving more than 100 people are required to have certified operators who are trained and knowledgeable about the operation, maintenance, and requirements to manage the water system and its facilities. However, owners or operators of transient systems are often unaware of the requirements and the turnover rate among those responsible for sampling is high. The DWB staff attempt to minimize these problems by sending letters that remind systems of the monitoring that is due. An inventory verification letter is also sent to systems biannually to keep the PWS address and contact information as accurate as possible.

Of the transient systems that have collected the proper samples in 1997, five percent (5%) exceeded the maximum contaminant level for the Total Coliform Rule and only 0.1% exceeded the MCL for nitrate. However, it is difficult to offer a true representation of the quality of the

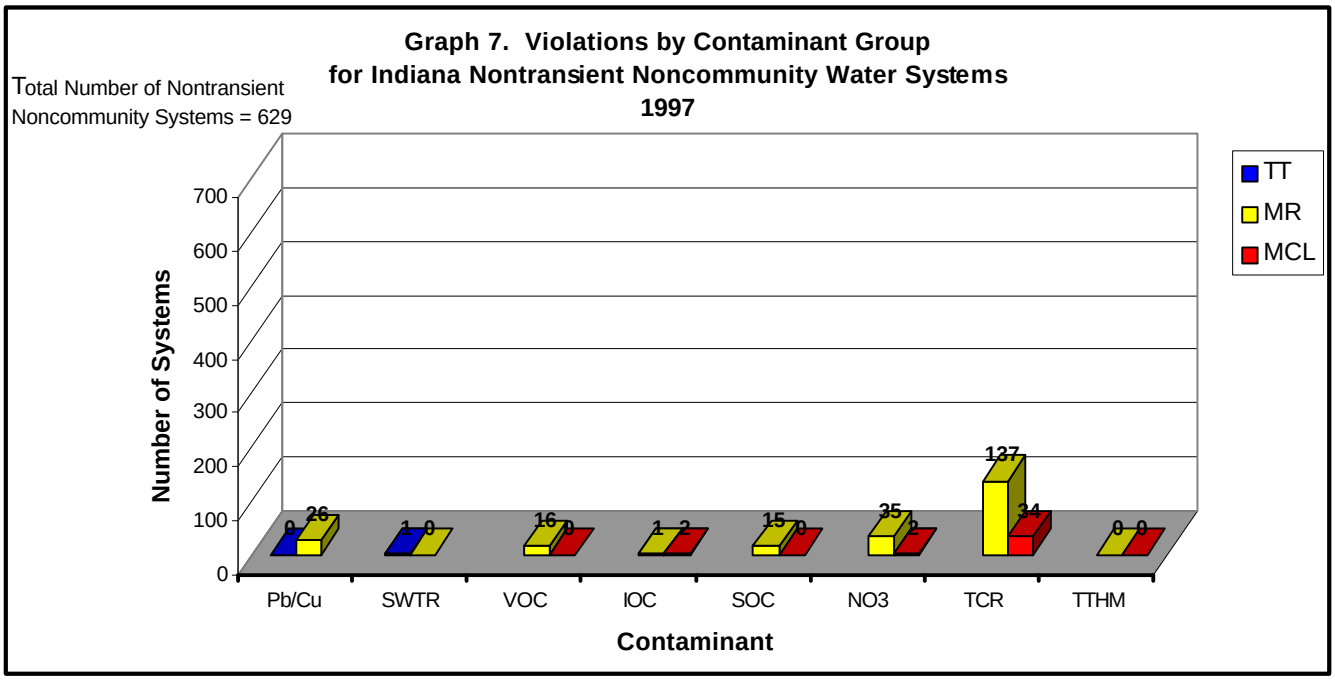
[4] The data used to generate the numbers for this table were extracted from the Federal Safe Drinking Water Information System (SDWIS/FED) database and additional updated information from the Indiana Public Water Supply Compliance Database. Every effort is made to match the data in both databases. However, due to the enormous volume of violations from transient systems for quarterly bacteriological monitoring, and the lack of resources at the state level, these violations are not reported to SDWIS/FED. These monitoring and reporting violations are nonetheless tracked at the state level. Bacteriological MCL violations for transient systems are tracked and investigated by DWB staff. Reporting of bacteriological violations of transient systems is not included in our commitment to EPA related to the quarterly reporting of information to SDWIS/FED.

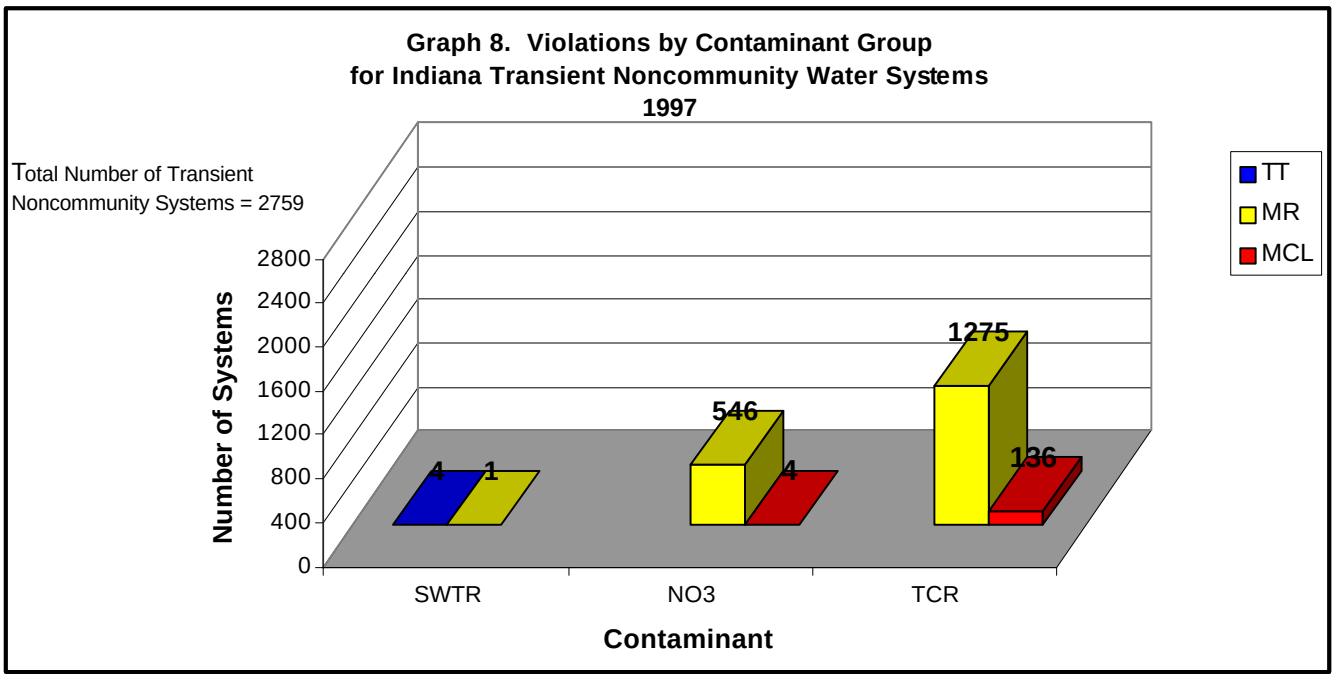
Table 1. Violations by Contaminant Group for Indiana Public Water Systems											
		Pb/Cu	SWTR	VOC	IOC	SOC	NO3	TCR	TTHM	Rads	Totals
	MR	31	0	30	2	20	50	167	4	2	228
Community	MCL			4	2	1	5	51	0	2	64
	TT	0	4								4
	MR	26	0	16	1	15	38	137	0		185
Nontransient	MCL			0	2	0	2	34	0		37
Noncommunity	TT	0	1								1
	MR		1				546	1275			1360
Transient	MCL						4	136			140
Noncommunity	TT		1								1



LEGEND

TT=Treatment Technique Violation
MR=Monitoring/Reporting Violation
MCL=Maximum Contaminant Level Violation
Pb/Cu=Lead and Copper
SWTR=Surface Water Treatment Rule
VOC=Volatile Organic Compounds
IOC=Inorganic Chemicals
SOC=Synthetic Organic Compounds
NO3=Nitrate
TCR=Total Coliform Rule
TTHM=Total Trihalomethanes
Rads=Radionuclides





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VOC=Volatile Organic Compounds
IOC=Inorganic Chemicals
SOC=Synthetic Organic Compounds
NO3=Nitrate
TCR=Total Coliform Rule
TTHM=Total Trihalomethanes
Rads=Radionuclides

drinking water served by transient systems if such a large number of systems did not complete the appropriate sampling for their systems.

Less than six percent (6%) of all types of active public water supplies exceeded the maximum contaminant level for a drinking water standard in 1997. This includes all community, nontransient noncommunity, and transient noncommunity systems. The percent of community and nontransient noncommunity systems that have complied with the monitoring and reporting requirements for the contaminant groups other than total coliform are all above 94%. The higher compliance rates among these systems are the positive result of proactive efforts of the PWSs and various compliance assistance efforts within the Drinking Water Branch.

COMPLIANCE ASSISTANCE EFFORTS

The Drinking Water Branch assists public water system owners and operators in a variety of ways in order to promote compliance with the drinking water regulations. Assistance is both proactive and reactive and comes in the form of site visits, correspondence, telephone conversations, and educational presentations and materials.

Site Visits Staff from the Drinking Water Branch personally assist the owners or operators with issues related to their public water supplies. The staff member may conduct various inspections such as sanitary surveys, vulnerability assessments, or well site surveys.

If a system is having water quality problems, an inspector may contact the facility or visit the site to help the operator investigate the cause of the problem and provide suggestions to mitigate the problem. For example, if a system exceeds the maximum contaminant level for total coliform or fecal coliform, an inspector will follow-up with the system within twenty-four (24) hours. The inspector may physically visit the site, or at a minimum, contact the operator via telephone.

***Sanitary Survey**: An on-site inspection of the water source, facilities, equipment, construction, and operation and maintenance for producing and distributing safe drinking water.*

***Vulnerability Assessment**: An evaluation of surrounding land use to determine the potential for contamination from VOCs and SOCs to a public water supply.*

***Well Site Survey**: An on-site review of the potential sources of contamination before a new well is permitted to be drilled.*

The following site visits were conducted in 1997 by the Drinking Water Branch staff:

Sanitary Surveys	**458**
Vulnerability Assessments	**646**
Well Site Surveys	**104**
Technical Assistance Visits	**408**
MCL Follow-up Visits	**236**

Courtesy Reminder Letters To promote timely monitoring and reporting of the required contaminants, IDEM strives to send courtesy reminder letters to water supplies to remind the operators of upcoming monitoring deadlines. The frequency and timeliness of the distribution of these letters is dependent on staff workload, so these letters are not guaranteed, nor promised to public water supplies.

Compliance Reminder Letters If a system does not monitor for a specific contaminant and/or fails to submit the report to the DWB, a reminder letter is sent to request a copy of the results. If the system does not have results for the required monitoring, they must notify their customers. An example of a public notification with the appropriate language is provided with the reminder letter to assist systems with the notification process.

Monitoring Waivers The DWB offers waivers for certain chemical contaminants to community and noncommunity nontransient public water supplies. The waivers allow for a reduction of the minimum base monitoring requirements of the drinking water regulations if the system meets particular criteria. These reductions are granted for a limited time period and must be reevaluated periodically to ensure that conditions have not changed. The criteria to qualify for a waiver differs depending on the contaminant involved, past sampling results, the use of contaminants in the area, and the geological setting of the water source. The use of waivers reduce the financial impact of sampling and increase compliance with the drinking water regulations. These cost savings are achieved while still ensuring safe drinking water.

Interim Monitoring Relief The 1996 Amendments to the Safe Drinking Water Act provide for monitoring relief for the volatile organic compounds and the synthetic organic compounds during the second compliance period (1996-1998) for those systems serving a population 10,000 or less. Systems with a population between 3,300 and 10,000 were offered monitoring waivers in the past which provided monitoring relief beyond what the SDWA Amendments offered, therefore only systems with a population of 3,300 or less were considered for interim monitoring relief in Indiana. A system may be eligible for monitoring relief if they have not detected VOCs and/or SOCs since 1993, and the DWB determines that the public water system is not vulnerable to VOC and/or SOC contamination. The DWB sent vulnerability assessment forms to approximately 1,000 systems that may be eligible for monitoring relief. As of December 31, 1997, the Field Inspection Section had reviewed 646 vulnerability assessments. If a system qualifies for interim monitoring relief, a cost savings of approximately $4,500 per system for laboratory costs can be realized while still ensuring safe drinking water.

Outreach An internal workgroup worked to enhance compliance assistance efforts to the regulated community. In 1997, the workgroup focused on improving the information booth that is used at conferences and community events to provide information to the public. The Drinking Water Branch Staff coordinate with various trade associations to provide speakers and information booths at conferences in order to inform the public and the regulated community of upcoming regulations, deadlines, and issues. The workgroup also began developing a workbook that will be used to enhance compliance and technical assistance to transient noncommunity systems. The workbook is designed to be distributed by field inspectors during on-site visits or may be used to as a guidance document during training workshops. The workbook is scheduled for completion in 1998.

Part of the 1996 Amendments to the SDWA established provisions that allow states to apply for set-aside money under the State Revolving Fund (SRF). IDEM has applied for these funds which will be used to assist and improve compliance of small PWSs serving populations of 10,000 or less.

CONCLUSION

The 1996 Amendments to the Safe Drinking Water Act mandate that states with primacy submit an annual report of violations of drinking water regulations by public water supplies. This report summarizes the violations by public water supplies in the State of Indiana from January 1, 1997 through December 31, 1997 and serves to fulfill the annual reporting requirement.

Considering the data submitted by the public water systems in 1997, approximately ninety-four percent (94%) of the total number of public water supplies met the requirements of the Safe Drinking Water Standards in 1997. Although six percent (6%) of the systems violated a maximum contaminant level or treatment technique in 1997, many systems worked with the DWB to resolve their problems. To date, only one half percent (0.5%) of the systems have not resolved the maximum contaminant level exceedences reported during 1997.

The FY 1998-99 IDEM/EPA Environmental Performance Partnership Agreement states IDEM's objective that by 2005, 99 percent of the population served by public water supply systems will have water that meets Safe Drinking Water standards. The current statistics from the public water supplies that have performed the required sampling indicate that this objective is within reach. However, until the number of monitoring and reporting violations are minimized, especially for the transient systems, the quality of the water served to the citizens of Indiana is not completely represented.

There are many existing tools that IDEM uses to target PWSs with violations that are a risk to human health. IDEM uses a balanced compliance strategy to enhance the capacity of the system to comply with the SDWA. State revolving fund monies are available to assist eligible systems in this effort. Enforcement is also used when the violations are serious or recurrent in nature. With continuing education, increased outreach efforts, state revolving fund loans, technical assistance, and enforcement actions when necessary, compliance with the Safe Drinking Water Act can be obtained.

IDEM will investigate and pursue innovative approaches to promote compliance with the Safe Drinking Water Act and to ensure that all Indiana citizens have an adequate supply of clean, safe drinking water.

If you have any questions concerning this report, please contact the Drinking Water Branch at (317) 308-3280. Additional copies of this report are available via the Indiana Department of Environmental Management, Office of Water Management web-site at *http://www.ai.org/idem/owm/index.html* or by contacting the Drinking Water Branch at (317) 308-3280.

APPENDICES

APPENDIX A

REGULATED CHEMICAL DRINKING WATER CONTAMINANTS
MAXIMUM CONTAMINANT LEVELS

APPENDIX B

TABLE A – MONITORING REQUIREMENTS FOR PUBLIC WATER SUPPLIES
TABLE B – MONITORING FREQUENCIES FOR PUBLIC WATER SUPPLIES
TRANSIENT WATER SYSTEMS
TABLE C – MONITORING FREQUENCIES FOR PUBLIC WATER SUPPLIES
COMMUNITY AND NONTRANSIENT NONCOMMUNITY WATER SYSTEMS

APPENDIX C

(Available Upon Request)
SUMMARY OF SYSTEMS WITH MCL VIOLATIONS
TOTAL COLIFORM RULE
NITRATE
SYNTHETIC ORGANIC COMPOUNDS
VOLATILE ORGANIC COMPOUNDS
INORGANIC CHEMICALS
RADIONUCLIDES
SURFACE WATER TREATMENT RULE (Treatment Technique Violations)

APPENDIX D

(Available Upon Request)
SUMMARY OF SYSTEMS WITH M/R VIOLATIONS
TOTAL COLIFORM RULE
NITRATE
LEAD AND COPPER
SYNTHETIC ORGANIC COMPOUNDS
VOLATILE ORGANIC COMPOUNDS
INORGANIC CHEMICALS
RADIONUCLIDES
TOTAL TRIHALOMETHANES
SURFACE WATER TREATMENT RULE

APPENDIX A
Regulated Chemical Drinking Water Contaminants
Maximum Contaminant Levels

Contaminant	MCL	Contaminant	MCL	Contaminant	MCL
Inorganic Chemicals (IOCs)	**mg/l**	**Volatile Organic Compounds (VOCs)**	**ug/l**	**Synthetic Organic Compounds (SOCs)**	**ug/l**
Antimony	0.006	1,1-Dichloroethylene	7	2,4-D	70
Arsenic	0.05	1,1,1-Trichloroethane	200	2,4,5-TP (Silvex)	50
Barium	2	1,1,2-Trichloroethane	5	Alachlor	2
Beryllium	0.004	1,2-Dichloroethane	5	Atrazine	3
Cadmium	0.005	1,2-Dichloropropane	5	Benzo(a)pyrene	0.2
Chromium	0.1	1,2,4-Trichlorobenzene	70	Carbofuran	40
Cyanide (free)	0.2	Benzene	5	Chlordane	2
Fluoride (Adjusted) *	2	Carbon Tetrachloride	5	Dalapon	200
Fluoride (Natural) *	4	Cis-1,2-Dichloroethylene	70	Di(2-ethylhexyl)adipate	400
Mercury	0.002	Dichloromethane	5	Di(2-ethylhexyl)phthalate	6
Nickel	---	Ethylbenzene	700	Dibromochloropropane (DBCP)	0.2
Selenium	0.05	Monochlorobenzene	100	Dinoseb	7
Thallium	0.002	o-Dichlorobenzene	600	Dioxin (2,3,7,8-TCDD)	3X10-5
		p-Dichlorobenzene	75	Diquat	20
Sodium *	No MCL	Styrene	100	Endothall	100
		Tetrachloroethylene	5	Endrin	0.2
Asbestos		Toluene	1000	Ethylene Dibromide (EDB)	0.05
Asbestos	7 MFL**	Trans-1,2-Dichloroethylene	100	Glyphosate	700
		Trichloroethylene	5	Heptachlor	0.4
Nitrate		Vinyl Chloride	2	Heptachlor epoxide	0.2
Nitrate	10	Xylenes (total)	10,000	Hexachlorobenzene	1
Nitrite	1			Hexachlorocyclopentadiene	50
Total Nitrate & Nitrite	10			Lindane	0.2
		Total Trihalomethanes **** (for systems >10,000)	100	Methoxychlor	40
Lead & Copper				Oxamyl (Vydate)	200
Lead Action Level	0.015			PCBs	0.5
Copper Action Level	1.3			Pentachlorophenol	1
				Picloram	500
Radionuclides *	**pCi/l**			Simazine	4
Gross Alpha	15			Toxaphene	3
Gross Alpha Action Level	5				
Radium-226 Action Level	3				
Radium-226 & Radium-228 (combined)	5				
Manmade	***				

* Community Water Systems Only
** MFL=million fibers/liter > 10 micron
*** The average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater that four (4) millirem per year.
**** The sum of the concentrations of bromodichlormethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform).

APPENDIX B

Table A - Monitoring Requirements for Public Water Supplies

	APPLICABLE RULE											
SYSTEM TYPE	**TCR**	**Nitrate**	**Pb/Cu**	**IOC**	**VOC**	**SOC**	**Rads**	**TTHM***	**SWTR**	**Asbestos**	**Sodium**	**Fluoride**
Community												
Surface Water	X	X	X	X	X	X	X	X	X	X	X	X
Groundwater	X	X	X	X	X	X	X	X		X	X	X
Purchased Water	X		X					X**		X		
Nontransient												
Surface Water	X	X	X	X	X	X		X	X	X		
Groundwater	X	X	X	X	X	X		X		X		
Purchased Water	X		X							X		
Transient												
Surface Water	X	X							X			
Groundwater	X	X										
Purchased Water	X											

*For systems with a population >10,000
**For systems with a population >10,000 and who re-chlorinate the water

Table B - Monitoring Frequencies for Public Water Systems
Transient Noncommunity Water Systems

Contaminant Group	Source Type	Sampling Frequency *
Total Coliform Rule	S	All systems served by surface water must monitor monthly. The number of samples required is dependent on population.
	G, P	Transient Noncommunity systems must sample quarterly. The number of samples required depends on the population served.
Nitrate	S	Once per quarter
	G	Once per year
Surface Water Treatment Rule	S	Daily turbidity readings; daily and monthly disinfection residual levels

* This table does not take into account detections, MCLs, reductions, or waivers.
Source Types: S=Surface, G=Ground, P=Purchased

Table C - Monitoring Frequencies for Public Water Supplies
Community and Nontransient Noncommunity Water Systems

Contaminant Group	Source Type	Sampling Frequency *
Total Coliform Rule	S	All systems served by surface water must monitor monthly. The number of samples required is dependent on population.
	G, P	Community systems must sample monthly. The number of samples required depends on the population served. Nontransient Noncommunity systems must sample quarterly. The number of samples required depends on the population served.
Nitrate	S	Once per quarter
	G	Once per year
Lead/Copper	S, G, P	Two consecutive six month periods, followed by three years of annual sampling, then once every three years thereafter. The number of samples is dependent on population.
Inorganic Chemicals	S	Once per year
	G	Once every three years
Volatile Organic Compounds	S	Once per quarter for four quarters in the first year, then once per year
	G	Once per quarter for four quarters, repeated every three years
Synthetic Organic Compounds	S,G	Once per quarter for four consecutive quarters during the first compliance period
Radionuclides	S, G	Once per quarter for four consecutive quarters, every four years
Total Trihalomethanes	S, G, P	Only required for systems that chlorinate and have a population >10,000 Four samples per quarter per treatment plant
Surface Water Treatment Rule	S	Daily turbidity readings; daily and monthly disinfection residual levels
Asbestos	S, G, P	One sample every nine years
Sodium	S	Once per year (Community Systems Only)
	G	Once every three years (Community Systems Only)

* This table does not take into account detections, MCLs, reductions, or waivers.
Source Types: S=Surface, G=Ground, P=Purchased

APPENDIX C
SUMMARY OF SYSTEMS WITH MCL VIOLATIONS
(Available Upon Request)

APPENDIX D
SUMMARY OF SYSTEMS WITH M/R VIOLATIONS
(Available Upon Request)